time the seal is broken until it is reestablished, the full suction of the stack acts to pull air or gas, and in some cases both, into the stack.

With some valves, the furnace itself is directly connected to the stack through both regenerators, at reversal, so that a portion of the stack-pull tends to draw air in at the doors. This may or

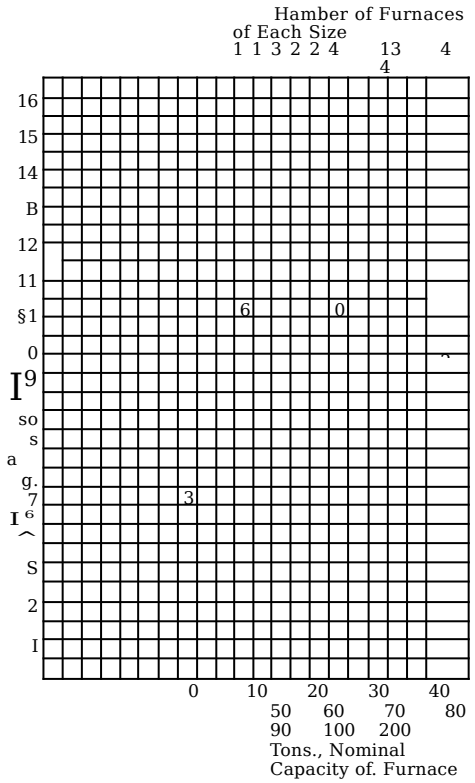

FIG. 160.—Graphical Comparison of Gas Valve Areas of Various Open-hearth Furnaces.

may not be seriously objectionable, according to the distance between the valve and the furnace and the rapidity with which the valve may be operated.

Moisture absorbed from water seals is a direct loss of the amount of heat required to evaporate it and superheat it

to the temperature at which it passes out of the regenerator to the stack.

In addition, its dissociation probably occurs in the checkers, which may release some oxygen to combine with other combustibles at